

Remarks

1. Applicants amend the specification to make the description portion of the specification consistent with the original claim 16.

The value cited in the original claim 16 is between 80 and 200 nanometers. The corresponding value in the original description is 0.13 micrometers, which falls in the value range of claim 16. Applicants amend the description to make it consistent with the claim.

MPEP 2144.05 cited in the Office Action does not apply here because that section refers to overlapping values between a claim and a prior art. Not between the description portion and the claim portion of an application.

2. New independent claim 17 overcomes 102(e) rejection and stands patentable over the cited reference.

- a. Claim 17 describes an integrated sample holder for a TEM sample. The sample holder has a base of a semiconductor material. It has a top surface and a substantially flat bottom surface of which the area is sized to engage a TEM double tilt holder.

The TEM sample extends upward from the base. It has an upper surface and opposing sidewalls. A metallic layer is disposed on this upper surface. The opposing sidewalls are substantially parallel to each other. Many elements in claim 17 are absent in the Lyons reference cited in the Office Action.

- b. **The Lyons reference cited in the Office Action** teaches a method of forming a conductive structure. The structure as shown in Fig. 5 has a substrate 10 of undetermined dimension. It has an aluminum-copper alloy conductive film 12 that is 1,500Å tall and 400Å wide¹. On top of the conductive film is the remnant of the sidewall material 18a, which may be silicon oxide, silicon oxynitride or silicon nitride.²

As Examiner Fourson correctly points out, the Lyons reference teaches that the conductive film may include metal layers and silicon layers, and the dimensions of the conductive film portion may be from 100Å to 2,000Å in width and 300Å to 3000Å in height. But even considering its entire range, the Lyons reference still lacks many elements in claim 17 of the present invention.

- c. **At least the following elements of the claim 17 are missing from the Lyons reference:**

- i. a base of semiconductor material having a bottom surface sized to engage a TEM double tilt holder.

The structure in the Lyons reference has a substrate of undetermined dimension. It is reasonable to surmise that during process, the substrate is the wafer; after process, the substrate is the chip. On the other hand, because claim 17 describes an integrated sample holder for TEM, the base

¹ Lyons reference, column 9, line 16.

size of the holder is limited for the purpose of engaging the sample holder of the TEM machine.

- ii. a TEM sample extending upward from the base.

The word extending has its ordinary meaning of stretching out or enlarging.³ This limitation is supported because the method disclosed in the present invention requires a designed amount of overetch, which naturally results a continuation of material between the base and the volume of material without a distinct boundary between the two.

In contrast, the structure in Fig. 5 in the Lyons reference shows a distinct boundary between elements 10 and 12, which are of two distinctly different materials.

- iii. a metallic layer disposed on the upper surface.

The Lyons reference teaches a method to make a conductive structure. One key element of this method is to use a sidewall material to mask off the conductive film during anisotropic etch. The three specific sidewall materials listed in the reference are silicon dioxide, silicon oxynitride, and silicon nitride. Neither one of the three is metallic. The Lyons reference does not even

² Id, column 4, line 31.

³ See extend, Webster's New World college Dictionary, 1997

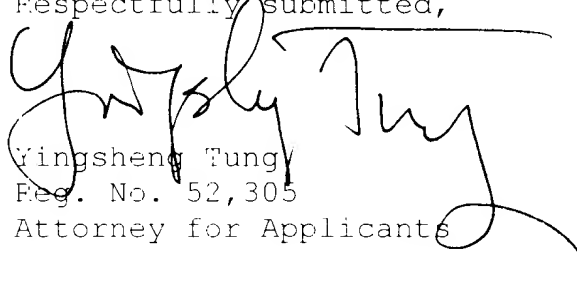
suggest using metal as mask to make a conductive structure.

In summary, claim 17 is patentable because the elements are supported in the original specification and original drawing figures and the limitations are not anticipated by the Lyons reference.

3. The dependent claims stand patentable. The dependent claims 14, 16, 18, 19, and 20 depend on patentable claim 17 with additional limitations not taught in the cited reference. In particular, claim 14 further limits the metallic layer to include platinum; claim 16 further limits the distance between the parallel sidewalls of the TEM sample; claim 18 further includes a notch that runs parallel to an edge of the base; and claim 20 further include an insulating layer in the TEM sample. The dependent claims stand patentable over the cited reference.

In view of the amendments, Applicants respectfully submit that the application is in allowable form and the claims distinguish over the cited reference. Applicants respectfully request the reconsideration or further examination of this application.

Respectfully submitted,


Yingsheng Tung
Reg. No. 52,305
Attorney for Applicants

Texas Instruments Incorporated
P. O. Box 655474, MS 3999
Dallas, Texas 75265
(972) 917-5355